ALNOR®

CompuFlow®
microprinter™
model 8520

OWNER'S MANUAL

SAFETY NOTICE

All necessary precautions must be observed when operating the CompuFlow Microprinter in the vicinity of moving equipment such as motors and blowers. The user must exercise care to ensure that the cables of the printer and mating instrument do not interfere with any moving equipment.

CAUTION

The operating temperature range of the printer is 50 to 104 F (10 to 40 C) and should not be exceeded. Poor quality printing with possible damage to the printer's motor may result if the temperature range is exceeded.

WARRANTY

Your warranty information and reply card are enclosed elsewhere in this package. After locating this material, please return the reply card and retain the remaining warranty information.

WARNING: Opening or otherwise attempting to service your Alnor instrument will void the warranty. Please read the warranty statement carefully.

TRADEMARKS

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ALNOR
AL-TEMP
BALOMETER
COMPUFLOW
DEWPOINTER
DIGICON
DIGITHERM
MICROPRINTER
PYROCON
PYRO LANCE
PYROMATIC
PYRO POINT
PYROTAC
PYROTROLLER
THERMOCON
VELOMETER
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Skokie, Illinois 60077

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GENERAL DESCRIPTION

The CompuFlow Microprinter shown in FIGURE 1 is a portable thermal printer that allows a user to obtain permanent, hard copy results of measurements taken with a CompuFlow mating instrument. This microprocessor based device formats the output showing the number of readings, their values and average. In addition, an identification heading is automatically provided at the beginning of each data set. After the average is printed, a date and signature section is automatically provided for the user.

The model 8520 Microprinter contains no batteries. It is powered directly from the batteries in the CompuFlow mating instrument. Data can be printed by depressing the PRINT button on the CompuFlow mating instrument. About 500 lines of data can be printed within a four hour "on" time before the batteries in the mating instrument need to be recharged. Actual battery life depends on the number of lines printed and the condition of the batteries when the instrument is turned on.

The CompuFlow Microprinter comes in an impact resistant plastic case. Its small size and weight allow it to easily be worn at the waist by means of a belt clip, freeing both hands to operate the CompuFlow mating instrument.

Figure 1. CompuFlow Microprinter with Mating Instrument

PREPARATION FOR USE

1. Remove the Microprinter and mating instrument from the case.

2. As is shown in FIGURE 2, attach the Microprinter to the mating instrument using the 7 pin locking connector. Grasp the printer connector at the black collar and align the keyway with the mating instrument. Gently push the connector forward about ¼ inch. Lock the connector in place by rotating the silver collar clockwise about two full turns.

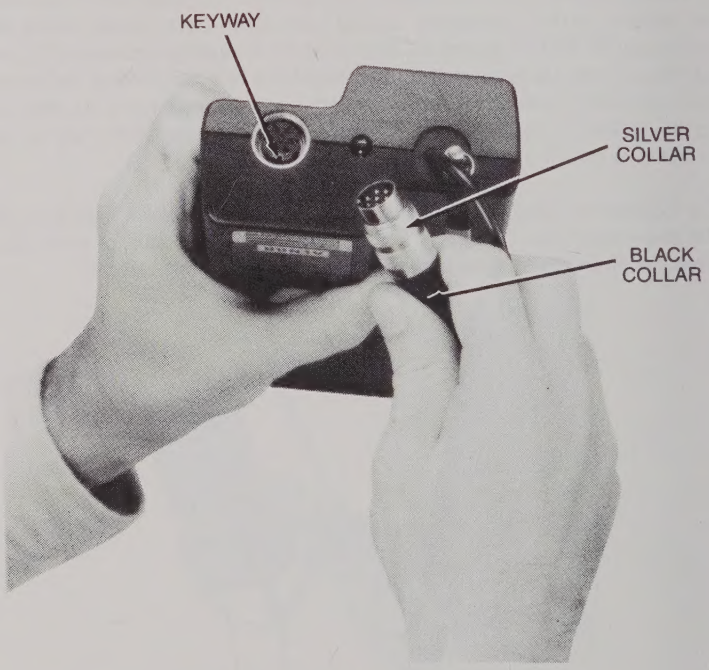

Figure 2. Connecting the Microprinter

3. Prepare the CompuFlow mating instrument for use as decribed in its manual.

4. The printer normally comes from the factory with a roll of paper already installed. At this point, the printer is ready for operation. If paper is not installed in the printer, read the section titled STEP BY STEP OPERATION located in the OPERATION section of this manual.

OPERATION

The operating controls and features of the model 8520 CompuFlow Microprinter are illustrated in FIGURES 3 and 4 and described in TABLE 1.

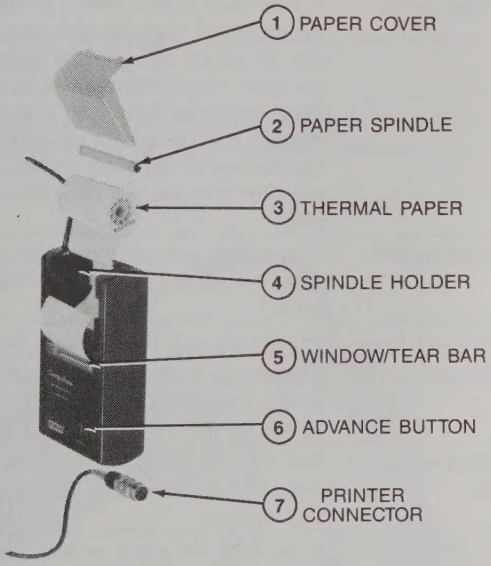

Figure 3. Front View of Microprinter

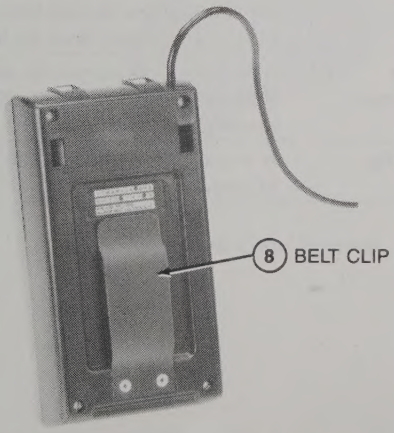

Figure 4. Back View of Microprinter

Table 1. Description of Microprinter Features

INDEX NO.	NAME	DESCRIPTION
1	Paper Cover	A removable paper cover is provided to protect the paper roll from possible damage when in use. To remove cover, gently press the rear of the cover inward about 1/8 inch and lift up. To attach the cover, hold it so that the long tab is inserted into the printer case. Then, while pushing the rear of the cover inward, guide the two rear tabs into the case until the cover snaps in place.
2	Paper Spindle	The spindle is inserted through the center of the paper roll and is used to hold the paper in place.
3	Thermal Paper	Paper used with the printer is heat sensitive.
4	Spindle Holder	The spindle holder is an integral part of the printer case. The paper spindle is held in place by the spindle holder.
5	Window/Tear Bar	The window allows the user to see the last line printed. Also, the paper may be neatly torn at this location.
6	ADVANCE Button	To advance the paper without printing, this button is depressed. Paper continues to feed thru the printer as long as the ADVANCE button is pushed. (Note: The printer must be attached to the CompuFlow mating instrument, and the mating instrument must be turned on.)
7	Printer Connector	A locking 7 pin connector attaches the Microprinter to the CompuFlow mating instrument.
8	Belt Clip	A belt clip is located on the back of the Microprinter.

STEP BY STEP OPERATION

1. Plug the Microprinter into the CompuFlow mating instrument as described in the PREPARATION FOR USE SECTION. Turn the CompuFlow mating instrument on.

2. To install a fresh roll of paper, make a clean straight cut across the free end of the paper.

3. As shown in Figure 5, remove the paper roll cover by pushing inward about 1/8 inch on the rear of the cover and then lifting up.

Figure 5. Paper Roll Cover Removal

4. Remove the used roll of paper from the Microprinter by gently pulling straight out on the roll. Save the paper spindle for the fresh roll of paper.

5. As shown in Figure 6, install the fresh roll of paper by inserting the free end into the slot. (The printing surface of thermal paper is the outside surface on the roll, so the printing surface is underneath when the end is inserted in the slot.) Note that the fresh roll is not yet inserted into the spindle clips. Push the paper forward until a slight resistance is felt. At this point, depress the ADVANCE button to feed the paper into the printer. Hold the ADVANCE button down until paper emerges from the top of the Microprinter. Release the ADVANCE button.

Figure 6. Installing Paper

6. Insert the paper spindle into the center of the paper roll. As necessary, wind-up any paper slack onto the new roll. Take the paper roll and insert it between the spindle clips as shown in Figure 7.

Figure 7. Completion of Paper Installation

7. To attach the cover, hold it so that the long tab is inserted into the printer case. Then, while pushing the rear of the cover inward, guide the two rear tabs into the case until the cover snaps in place.

8. The Microprinter may be worn at the waist by attaching the printer to a user's belt with the clip provided at the bottom (back) of the printer.

9. The Microprinter is now ready for operation. To obtain an output of the display, turn on the CompuFlow mating instrument. Depress the PRINT button on the CompuFlow mating instrument when the displayed value is to be printed. A sample output is shown in FIGURE 8.

```
ID:
   NO.      VALUE
   01        35 FPM
   02       394 FPM
   03       148 FPM
   04       398 FPM
   05        27 FPM
   06       905 FPM

AVE:        318 FPM

DATE:
SIGN:
```

Figure 8. Sample Microprinter Output of Velocities

LIST OF PARTS

116-159-006	Operator's Manual CompuFlow Microprinter
538-493-009	Thermal paper (6 pack, black print)
315-001-000	Paper spindle
321-060-003	Paper cover
638-493-000	CompuFlow Microprinter model 8520

MAINTENANCE

The model 8520 Microprinter is virtually maintenance free. There are no batteries or user maintainable parts inside the unit. The instrument case never needs to be opened by the user.

If the unit becomes soiled, the case may be cleaned using water and a moist cloth. Do not allow liquids inside the case, or to come in contact with the ADVANCE button on the front of the Microprinter.

CAUTION:

DO NOT PRINT WITHOUT HEAT SENSITIVE PAPER IN THE PRINTER.

IF PAPER OTHER THAN THE RECOMMENDED HEAT SENSITIVE PAPER IS USED, THE PRINTING QUALITY AND PRINTER HEAD CANNOT BE GUARANTEED.

Recommended paper is;

1. ALNOR thermal paper
   p/n 538-493-009
   6 pack thermal paper
   black print

The following paper may be used as a substitute:

2. HEWLETT PACKARD thermal paper
   catalog no. 82045A
   2.25″ by 80′
   blue print

3. HEWLETT PACKARD thermal paper
   catalog no. 82175A
   2.25″ by 80′
   black print

Should any difficulties arise in the operation of the unit, contact either your local Alnor distributor or Alnor Instrument Company. If it becomes necessary to return the unit for repair, see the WARRANTY/REPAIR INFORMATION and INSTRUCTIONS FOR RETURN sections of this manual.

TROUBLESHOOTING GUIDE

A guide to the elimination of minor problems is provided in the table below.

Table 2 Troubleshooting Procedures

SYMPTOM	POSSIBLE CAUSES AND CORRECTIVE ACTION
No Printing	Printer is not connected to mating instrument.
	Mating instrument is not turned on.
	Printer was connected after mating instrument was turned on. Turn mating instrument off, then on again.
	Batteries are dead in mating instrument. Recharge batteries.
	Operating temperature is below allowable range. Allow printer to stabilize at room temperature.
	Average has been computed and displayed. Mating instrument must be reset by turning off, then on again.
	Out of paper. Install fresh roll.
	Paper installed backwards. Install paper as described in Step by Step Operation.
	Incorrect paper. Use ALNOR thermal paper.
Paper Does Not Advance	Paper is jammed in printer. Make sure paper roll is installed correctly. If necessary, tear off paper at source. Carefully pull remaining paper thru printer at ejection slot.
	Incorrect paper. Use ALNOR thermal paper.
	Printer is not plugged into mating instrument.
	Mating instrument is not turned on.
	Batteries are dead in mating instrument. Recharge batteries.
	Operating temperature is below allowable range. Allow printer to stabilize at room temperature.

Table 2 Troubleshooting Procedures (Continued)

SYMPTOM	POSSIBLE CAUSES AND CORRECTIVE ACTION
Light Printing	Incorrect paper. Use ALNOR thermal paper.
	Operating temperature is below allowable range. Allow printer to stabilize at room temperature.
	Batteries in mating instrument are low. Recharge batteries.

SPECIFICATIONS

PRINTING METHOD	Thermal
PRINTING SPEED	1 line per two seconds (minimum)
NUMBER OF CHARACTERS	20 characters per line
PAPER	Thermal Thickness .003 in. (66 µm) Width 2.243″-2.283″ (57-58 mm) Black print
OPERATING RANGE	50 to 104 F (10 to 40 C)
STORAGE RANGE	−22 to 140 F (−30 to 60 C)
PRINTER DIMENSIONS	6 3/8″L x 3 1/2″W x 2 1/2″H (162L x 88.9W x 63.5H mm)
PRINTER WEIGHT	approx. 1½ lbs (680 grams)
CASE	Black impact resistant plastic with belt clip
BATTERIES	None. Printer receives power from mating instrument.
MATING INSTRUMENT	ALNOR CompuFlow thermo-anemometer 8500 D-II p/n 634-493-210 or p/n 634-493-220

WARRANTY/REPAIR INFORMATION FORM

Contact Alnor Instrument Company before returning your Alnor Instrument to the factory. See INSTRUCTIONS FOR RETURN. Follow the procedure carefully as it will expedite processing. Failure to follow the procedure will/may cause return of unit unrepaired. Send your instrument to the factory transportation prepaid. To assure fast turn-around time, fill out this form with as much detail as possible and attach it to the instrument.

Instrument Model _____

Serial Number _____

Date of Purchase _____ Where Purchased _____

Describe malfunction _____

_____

_____

_____

Describe environment _____

_____

_____

_____

Return instrument to:

Name _____
(Your name or company)

Address _____

_____

Telephone _____

Address Correspondence to:

Name _____

Address _____

_____

Telephone _____

INSTRUCTIONS FOR RETURN

Damaged in Transit

All shipments are carefully examined by Alnor Quality Assurance and carefully packed for shipment. They are insured in the customer's name with the carrier. On receipt, if the shipping container appears to have been damaged during shipment, the instrument should be thoroughly inspected. The delivering carrier's papers should be signed noting the apparent damage.

If the instrument itself has been damaged, a claim should be promptly filed against the carrier by the customer. Alnor will assist the customer by supplying all pertinent shipping information; however, claim must be filed by the insured.

If the instrument is damaged beyond use, a new order should be placed with Alnor while awaiting reimbursement from the carrier for the damaged instrument.

Malfunction

Please follow these steps should you require factory service or repair of your Alnor Instrument:

1. a. Telephone Alnor Instrument Company Repair Department 312-647-7866 for cost of repair or recalibration, Authorization For Repair (AFR) number and shipping instructions.

   b. If you require recalibration, determine whether you prefer:

   —Certificate of Calibration, no data (states instrument checked and found to be within accuracy claimed and specifications listed in current literature).

   —Certificate of Traceability (to NBS) with data (states instrument compared with factory standard traceable to NBS, lists calibration data, i.e., "Standard reads. . ." and "This instrument reads. . .")

2. Obtain a Purchase Order or purchase order number from your Purchasing Department showing instrument model number and cost of repair and/or recalibration.

3. Securely package your instrument in a strong container, surrounded by at least two inches of suitable shock-absorbing material. Include the Purchase Order, or Reference the Purchase Order on your packing slip.*

4. Mark the outside of the shipping container with the AFR Control number.

5. Forward the instrument prepaid to the following address:

ALNOR INSTRUMENT COMPANY
7555 N. Linder Avenue
Skokie, IL 60077
Attn: Repair Department

*Please note that instruments received improperly marked or without an accompanying Purchase Order may be returned at your expense.

Please also note that AFR# will be cancelled if the instrument is not received by ALNOR within 60 days.

NOTES

NOTES

Equipment Log

MODEL _____

DATE OF PURCHASE _____

MAINTENANCE RECORD

1. _____	2. _____	3. _____
4. _____	5. _____	6. _____
7. _____	8. _____	9. _____
10. _____	11. _____	12. _____

NOTES: _____

ALNOR INSTRUMENT COMPANY

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